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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,312	11/22/2000	Walter F. Rausch	1437	3505

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EXAMINER

NGUYEN, DUC M

ART UNIT PAPER NUMBER

2685

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/718,312

Applicant(s)

RAUSCH ET AL.

Examiner

Duc M. Nguyen

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 31 January 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see the attached "Response to Argument".
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

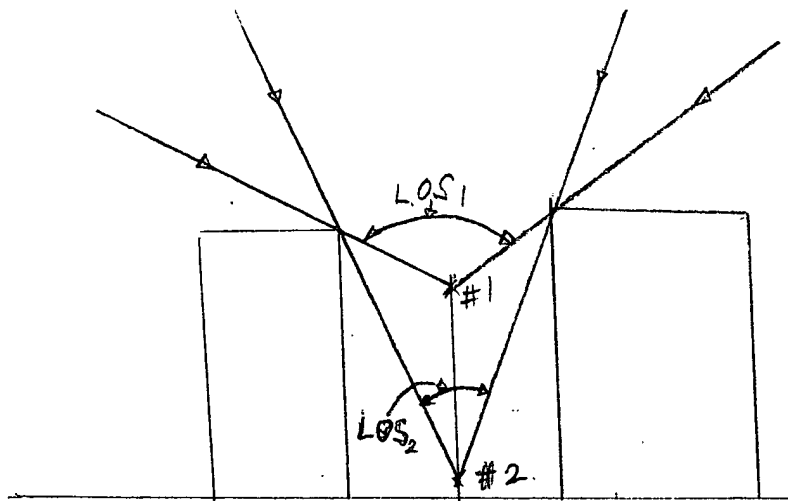
Claim(s) rejected: 1-6, 8-62, 64-68.

Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed 1/31/05 have been fully considered but they are not persuasive.
2. Response to the Declaration: It is noted that the statements made by the inventors rely on the line-of-sight (LOS) condition for which a GPS receiver will receive a GPS signal even if buildings are around the GPS receiver. However, it is also noted that the line-of-sight of a GPS receiver is changing with the position of the receiver as illustrated in the below drawing



As can be seen in the drawing, the LOS_1 of the GPS receiver at position 1 is wider than the LOS_2 of the GPS located at position 2, this implies that by placing the GPS at the position 1, the GPS signals blocked by buildings would be reduced as compared to the GPS located at the position 2. Therefore, it is believed that the declaration asserts

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the Examiner's point that by placing the GPS receiver on a tower or high positions, this would reduce signal blockage of a GPS signal caused by tall buildings.

3. Response to arguments: First, since the Csapo's reference (US 6,411,825) is the closest prior art, and in order to simplify the arguments for appeal purpose, the Examiner has decided to withdraw the rejections regarding the Schwartz's reference. Therefore, arguments directed to the Schwartz's reference in the response (namely points # 2-3, 16-18, 20, 23, 26) are moot. Following is Examiner's response regarding the Csapo's reference in view of Bickley (US 5,982,322) and Talbot (US 6,163,294).

a- Response to points #1, 7-10, 13-15, 19, 22, 24-26 regarding reasons to combine the references and a stabilizing system: Since Applicant's allege that the Examiner did not identify all the limitations of claims in the prior art in the rejection under Csapo in view of Talbot and Bickley such as a block converter, a fiber optic transmitter and a fiber optic receiver (see point #22 on page 27), the Examiner would list features that is disclosed or implicitly/inherently disclosed by Csapo.

Here, recall that Csapo discloses a base station comprising

- a communication tower (see Fig. 9);
- an antenna (see Fig. 9, ref. 120);
- a block converter (see col. 4, lines 43-50), wherein in order to convert a high frequency signal to a low frequency signal and vice versa, a block converter (or mixer) is needed. Therefore, it is clear that Csapo inherently discloses such a block converter;

- a fiber optic transmitter (see col. 6, lines 55-59), wherein it is clear that in order to provide an optical signal that will be less lossy than an electric signal, an optical/electrical conversion and an optic transmitter-receiver should be utilized. Therefore, Csapo inherently discloses such a fiber optic transmitter ;
- a fiber optic receiver (see col. 6, lines 55-59), wherein it is clear that in order to provide an optical signal that will be less lossy than an electric signal, an optic/electrical conversion and an optic transmitter-receiver should be utilized. Therefore, Csapo inherently discloses such a fiber optic receiver;
- a converting system configured to convert a communication signal to a lower frequency signal, and to convert the lower frequency signal to an optical signal, and to transmit the optical signal to an optical receiving system (see col. 4, lines 43-50 and col. 6, lines 55-59), wherein since Csapo inherently discloses a block converter, a fiber optic transmitter and a fiber optic receiver as explained above in the preceding paragraphs, it is clear that Csapo inherently discloses such a converting system;
- a timing source (see Fig. 13, ref. 140 regarding GPS receiver, Time & Frequency Generator);
- a GPS receiver (see Fig. 13, ref. 140);
- amplifiers (PA and LNA), a filter (see col. 7, lines 30-45);

Although Csapo is silent on a stabilizing system comprising a stable timing signal and a stabilized local oscillator, it is noted that Csapo teaches that "the PMU may also contain a GPS receiver which provides accurate clock and frequency signals to a main

controller module 125, the channel elements 130, the T/R interface 135, and to the PRUs (see **Csapo, Fig. 13, ref. 140, col. 7, lines 22-26**). Since Csapo does teach that the GPS receiver provides frequency signals to the PRU (remote unit), and since the PRU comprises a transceiver module which includes a frequency synthesizer (see Fig. 13, ref. 155), a block converter (inherently disclosed by Csapo as explained above), and since it is well known in the art that frequency synthesizer is a voltage controlled oscillator (VCO) with internal phase lock loop (PLL) for generating a variety of predetermined frequencies derived from a stable master oscillator which is in turn calibrated by accurate timing or frequency signals from a GPS receiver as taught by Bickley (see **col. 8, lines 1-19**), it would have been obvious to apply the stable master oscillator calibrated by the GPS of Bickley to the system in Csapo in order for the GPS receiver to provide frequency (or timing) signals to the frequency synthesizer for calibrating, which in turn provide a stabilized oscillator to the block converter (mixer) for converting the high frequency to a low frequency signal (see Csapo, col. 4, lines 43-50 regarding the frequency conversion). By using the GPS signal to calibrate the VCO of the frequency synthesizer, this GPS would provide a reference frequency (or timing) signal to the oscillator. Therefore, it is believed that in the knowledge generally available to one of ordinary skill in the art, based on Csapo's teaching of using the GPS receiver to provide frequency signals to the PRU (see **col. 7, lines 22-26**) and in order to perform the frequency conversion (see **col. 4, lines 43-50**), one skilled in the art would understand that Csapo would implicitly disclose a "stabilizing" system in that the GPS signal is used to provide a "stable" timing signal to calibrate the VCO of the frequency

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synthesizer, in order to provide an oscillator signal to the block converter (mixer) to perform the high/low frequency conversion.

However, Csapo does not specifically recite the frequency (or timing) signal of the GPS as being “stable”. However, Talbot discloses a communication device wherein the GPS timing signal is used to provide the “stable” timing signal to the operating frequency of the oscillator 74 (see **Fig. 3**, and **col. 5, line 64 – col. 6, line 9**) to correct long-term drift (see **Fig. 2**). Since Csapo does suggest that the GPS receiver provides frequency signals to the PRU (remote unit), it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teachings of **Talbot** to **Csapo** for providing a “stable” timing signal derived from the GPS receiver to the oscillator of the synthesizer of the PRU, thereby providing a stabilizing system as claimed, for reducing long-term frequency drift in the oscillator signal of the synthesizer (Talbot’s motivation, see Fig. 2). Here, regarding the combination, Bickley’s teaching is used solely for its discussion of the frequency synthesizer characteristics and the relationship of the oscillator signal and of the GPS receiver. Talbot’s teaching is used solely for its teaching of using the GPS timing signal as a “stable” timing signal for the oscillator to prevent long-term frequency drift. Although Talbot does not disclose a base station, its teaching is pertinent to the particular problem with which the applicant was concerned (i.e, preventing long-term frequency drift of the oscillator signal), hence, it can be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Here, the motivation for using the GPS timing signal to reduce frequency drift in the oscillator signal is clearly illustrated in Fig. 2 of the **Talbot's** reference. In addition, since **Talbot** and **Csapo** both direct to a communication device and a GPS receiver, their combination is proper.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, since there is some teaching, suggestion, or motivation to do so found in the references themselves, i.e., for providing stabilized oscillator signal derived from the GPS receiver (see **Bickley**, col. 8, lines 1-19 and **Talbot**, Figs. 2-3 and col. 5, line 64 - col. 6, line 9), and since **Csapo**, **Talbot** and **Bickley** all disclose a communication device and a GPS receiver, it

would have been obvious to one of ordinary skill in the art at the time the invention was made to provide teachings of **Talbot** and **Bickley** to **Csapo** for providing to the oscillator of the synthesizer, a stable timing signal derived from the GPS receiver, thereby providing a stabilizing system as claimed, for reducing (correcting) long-term frequency drift in the oscillator signal of the synthesizer (Talbot's motivation, see Fig. 2).

For foregoing reasons, the examiner believes that the combination of **Csapo**, **Bickley** and **Talbot** is proper and that the reason to combine the references is to reduce long-term frequency drift of the oscillator signal, which is clearly illustrated in Fig. 2 of **Talbot's** reference. Therefore, by simply using the GPS receiver to provide frequency signals (or stable timing signals) to the synthesizer, which in turn provide the stabilized oscillator signal to the block converter (or mixer) to convert a receiving RF signal to a (stable) lower frequency signal (see **Csapo**, **Figs. 9, 13, col. 4, lines 43-50, col. 6, lines 55-59 and col. 7, lines 22-26**), the claimed limitations of claims 1-6, 8-10, 14-17, 24-26, 28-29, 31, 35-40, 45-49, 51-52, 54, 56-62, 67 are made obvious by **Csapo** in view of **Bickley** and **Talbot**.

b- Response to points # 1, 11, 12, 21, 26 regarding the MMDS signal : As to Applicant's argument regarding multipoint multichannel distribution service (MMDS) based communication signals, it is noted that since MMDS signal is just a high-frequency signal (1.7-2.7 GHz) that provides a platform for providing services such as broadband data, voice, video and high-speed internet access (see specification page 6, lines 12-19) and is well known in the art, and since **Csapo** discloses a base station

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communicating with a plurality of mobile stations utilizing a plurality of signal protocols and can operate on various frequencies (see **Abstract** and **col. 8, lines 48-55**), it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Csapo** for providing the base station with MMDS capability for communicating to mobiles or fixed facilities (i.e, nearby base stations or indoor wireless devices) as well, for expanding enhanced services in order to fulfill customer needs (i.e, provide TV, video or high speed LAN access). Here, the reason to modify Csapo to provide MMDS capability to the base station is to expand enhanced services (i.e, provide TV, video or high speed LAN access) of the base station, thereby fulfilling customer needs. Note also that the MMDS limitation is recited only in the **preamble** of claims 11, 41 and therefore give this limitation very little patentable weight.

c- Response to points # 1, 4-6, 21, 26 regarding the GPS or timing source located at the upper portion of the tower: As to Applicant's argument regarding the location of the GPS (or timing source) at the upper portion of the tower, it is noted that since the GPS signal is used to provide frequency signals to both the PMU and the PRU units (see Csapo, col. 7, lines 22-26), it would have been obvious to locate the GPS either at the PMU or at the PRU. Further, since placing the GPS receiver at the top or upper portion of the tower would generally reduce the blockage of GPS satellite signals from multiple satellites caused by surrounding tall buildings as compared to placing the GPS receiver at the bottom or lower portion of the tower as illustrated in the drawing discussed in the above "Response to the Declaration", it would have been obvious to one skill in the art at the time the invention was made to modify **Csapo** to

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locate the GPS receiver at the top of the tower to reduce the blockage of GPS satellite signals caused by surrounding tall buildings. Therefore, by locating the GPS receiver at the PRU mounted at the upper portion of the tower, Csapo as modified would disclose a stable timing source located at the upper portion of the tower.

In summary, the examiner believes that he has provided a reason, suggestion or motivation to modify Csapo, Talbot and Bickley to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Therefore, the examiner believes that the pending claims are not allowable over the cited prior art.

4. Any response to this action should be mailed to:

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or faxed to:

(703) 872-9314 (for formal communications intended for entry)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (703) 306-4531, Monday-Thursday (9:00 AM - 5:00 PM). Or to Edward Urban (Supervisor) whose telephone number is (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Duc M. Nguyen

Feb 27, 2005



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